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PRINCIPAL INVESTIGATOR: Harry Lando, Ph.D.

CONTRACTING ORGANIZATION: University of Minnesota

Minneapolis, MN 55454-1015

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Smoking cessation, military, organizational support, pharmacotherapy, behavioral program, Internet

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INTRODUCTION:

The study was designed to test a community intervention that adhered to the Department of Defense clinical practice guidelines on tobacco use cessation. Originally, this study was developed to evaluate the efficacy of an intervention on smoking prevalence in the Air Force, Navy, Marines, and Army. However, after numerous administrative delays which were out of the control of the project team, which have been noted elsewhere, the Navy and Marines were removed from the study. In order to maintain the scientific integrity of the research, additional sites were selected from the Air Force and Army.

Even given lengthy and costly delays, our goal continued to be to provide the Department of Defense with a plan for tobacco reduction that could subsequently be disseminated throughout the DoD system. It was of great importance to us to be able to complete the study. Unfortunately, although we did everything we could to reduce our rate of spending, to obtain additional resources, and to conduct the study as originally designed, we were unable to carry out the study as originally designed. We applied for and received approval from you to alter the original design of the study due to administrative issues, financial considerations, political situations, and scientific integrity issues.

As a reminder, we modified the study by dropping the baseline and 18-month follow-up survey. Given that we were only able to recruit and maintain 12 sites, the time lag between the 4 original Air Force sites and the remaining 8 Air Force and Army sites, our ability to conduct the randomized clinical trial was compromised. Not only was the statistical power to conduct the randomized trial with the given number of sites not feasible based on the expected effect size of the intervention (which was likely to be an overestimate since historically the rates of smoking have increased during times of war), the time delays made the planned comparisons invalid. In addition, even using the "Gold Standard" of surveying techniques, we experienced an approximately 40% response rate for the baseline survey. This response rate is comparable to other large scale epidemiological surveys recently published, however, it is not as high a response rate as we were expecting based on our other studies with the military. Therefore, our estimates for number of participants needed for our cohort of smokers were too optimistic, resulting in lower numbers of smokers than needed for meaningful statistical analysis. In conclusion, even under the best-case scenario, we did not have the statistical power to examine our original endpoint using the current survey methodology. Although we considered the use of alternative proxy measures of smoking cessation, there were none that allowed a reasonable conclusion to be drawn. Therefore, we decided to eliminate the baseline and 18-month survey from the study protocol.

This past year we focused on three areas for the remainder of the study by; 1) providing and evaluating the pharmacotherapy benefit to installations, 2) providing the 3 modules of training and continuing to make modifications to the training as needed and evaluate the effectiveness with respect to improvement in tobacco cessation assessment and intervention-related knowledge, skills, and attitudes, and 3) focusing on the social marketing aspect by continuing the development and testing of targeted messages for 18-24 year-olds in the military. A brief discussion of each area and its reason for emphasis is provided below.

1) Pharmacotherapy: This is one of the main issues we were funded to evaluate via this project for the Department of Defense. In addition to being an important issue in itself, this benefit of

the study has been considered by many to be the main reason installations volunteered to participate. We have offered donated product in the form of nicotine patches (which is the only form of NRT on formulary) or have paid for tobacco cessation pharmacotherapy for our intervention sites. This enabled the site to provide an expanded benefit to its patients by allowing for smokers to access NRT without having to attend the smoking cessation class on the installation (which interferes with the duty day and is more difficult with deployments) or having to restrict its prescription to one time within a calendar year per person. By choosing this as one area of intense focus, we were able to provide more of the project resources to this important issue.

- 2) Tobacco Basic Skills Training: This key aspect of the project was very well received by military members. In addition, it has been shown to be extremely effective in other populations. This training component has 3 modules. The first is a series of over 500 PowerPoint slides that can be inserted into already existing briefings or combined into a stand-alone briefing. Topics of the slides include all aspects of tobacco use from finances, to medical issues, to prevalence rates, to cessation techniques. These professionally designed presentations can be provided to anyone who wants to use them. The second module is a two hour training that teaches anyone to intervene with a tobacco user in a respectful manner and refer them to specialized services. This training is designed for anyone who wants or needs to be able to talk to a tobacco user about their habit. For example, in addition to medical staff, chaplains, SP's and unit supervisors have completed this training. The third module is a two hour training designed for those individuals who will be working with the tobacco user directly during their quit attempt. This training focuses on providing the intervener with the skills necessary to motivate a tobacco user to quit and to assist them in their efforts. The combination of these training modules provides the necessary knowledge and skills to all individuals interested in tobacco prevention and cessation and increases the awareness of tobacco as an important health issue on military installations. By focusing more of the project resources on this area, we were able to produce a package of training materials that have undergone several iterations and evaluations that are tailored specifically to the military.
- 3) Social Marketing: Social marketing, which is the planning and implementation of programs designed to bring about social change using concepts from commercial marketing, is a new and exciting one in the realm of health. Its use with tobacco has been documented in other settings, most notably the "Truth" campaign in Florida that used social marketing to reduce the tobacco initiation rates among adolescents. This aspect of the project was targeted especially toward the junior enlisted personnel who have the highest rates of tobacco use in the military. In addition to focusing on a segment of the population at highest risk, it also was one of the most well received aspects of the project. This area of the project focused on developing messages and themes surrounding tobacco that resonate with our young troops. We worked with a communications company to develop targeted messages about tobacco use prevention and cessation through the use of focus groups. In addition, we developed these themes into a military specific media campaign across the installation. By focusing on this aspect of the project we were able to capitalize on new techniques in the field of health promotion that have promising preliminary results.

BODY AND KEY RESEARCH ACCOMPLISHMENTS:

At the end of the study, several milestones have been achieved which will benefit the military's efforts to reduce tobacco use. The following is a summary of our significant accomplishments to date.

1. Successful recruitment of the following military installations into the study:

Table 1: Military Installations Selected for the STAR Project

Installation	First	Last	Phone	Email
Hill AFB	Carolyn S.	Bennett	801-777-1215	carolyn.bennett@hill.af.mil
Tinker AFB	Brenda	Irwin	405-734-5505	Brenda.irwin@tinker.af.mil
Whiteman AFB	Janet	Rudderham	660-687-1199	Janet.Rudderham@whiteman.af.mil
Minot AFB	Dianna	Skidmore	701-723-2990	dianna.skidmore@minot.af.mil
Hurlburt Field AFB	Garren	Medeiros	850-884-4292	Garren.Medeiros@hurlburt.af.mil
Pope AFB	Nelta	Jean-Pierre	910-394-4292	Nelta.jean-pierre@pope.af.mil
Goodfellow AFB	Inez	Smith	325-654-5686	Inez.smith@goodfellow.afb.mil
Altus AFB	Jeanine	Hatfield	580-379-5647	Jeanine.hatfield@altus.af.mil
Fort Jackson	Patricia	Hick	803-751-5251	patricia.hick@se.amedd.army.mil
Fort Leonardwood	Cindy	Plank	573-596-0491	cynthia.planl@cen.amedd.army.mil
Fort Carson	Bridget	Minihane	719-526-3848	bridget.minihane@cen.amedd.army.mil
Fort Riley	Jennifer	Fenti	785-239-7520	jennifer.a.fenti@us.army.mil

2. Development and initial evaluation of tools and products which will be given to the DoD.

- a. DoD Comprehensive Community Tobacco Plan. The plan included detailed guidance and resources for intervention in the following areas: (i) leadership and policy; (ii) community action teams, (iii) primary care and dentistry, (iv) junior enlisted, (v) community based tobacco intervention training, and (v) social marketing. The plan was developed with input from military leaders and tobacco control scientists and was initially field-tested on 2 military bases. This plan has the potential of forming the basis of tobacco control programs for military installations worldwide.
- b. A tailored training program consisting of three modules: (1) a set of "awareness raising" briefings over 500 slides total; (2) An "Intervention and Referral" 2-hour skills building course, and (3) "Motivation and Assist" 2 hour skills building course. This training was modified based on feedback from the installations. It became one of the preferred

components of this project by participating installations. The training as modified as uniquely appropriate to the military setting.

- **3.** Pharmacotherapy was supplied to sites to support increased military installation interventions. We developed an algorithm for ordering, shipping, and distribution of the both the nicotine gum and the nicotine patch. This algorithm has widespread potential applicability for dissemination and practice.
 - 4. Utilized funding from the American Legacy Foundation to help support an additional component to the study which enabled us to develop a marketing campaign targeting 18-24 year olds in the military. This additional funding allowed us to conduct focus groups with several groups of individuals in order to identify key themes for our marketing campaign. We developed targeted media messages that have unique applicability to the military setting.
 - 5. We have successfully implemented the project at 4 Air Force installations (Whiteman, Tinker, Minot, and Hill). Progress continued to be made in each of the six areas of intervention outlined in the community plan. These four original sites completed the intervention component and follow-up survey.

Key accomplishments included:

- $\sqrt{}$ Reducing tobacco use a clear priority for installation
- √ An increase in the number and quality of tobacco related newspaper articles and information materials
- √ Medical personnel and leadership more keenly aware of DoD Tobacco Practice Guidelines
- $\sqrt{}$ Increased number of brief interventions occurring in primary care
- $\sqrt{}$ Engaging junior enlisted in tobacco control efforts
- √ Securing the consultation of media/marketing experts to design social marketing efforts which convince junior enlisted that tobacco use is inconsistent with military service
- √ Conduct of focus groups to determine messages/themes that resonate with junior enlisted personnel regarding tobacco
- √ Hundreds of installation personnel trained in brief tobacco interventions and tobacco control advocacy
- $\sqrt{}$ Highly visible leadership support for tobacco control efforts
- $\sqrt{}$ Produced a large volume of tobacco control briefings, tailored materials, informational sheets, and clinical materials for installation personnel
- √ Whiteman AFB established a walk-in clinic for smokers in primary care
- $\sqrt{}$ Sponsored conferences at military installations focusing on tobacco control
- **6. Implementing the project in the 4 additional AF sites.** We completed the baseline survey in the 4 additional AF sites (Altus, Goodfellow, Hurlburt Field, and Pope). We implemented the intervention at the two intervention sites (Goodfellow and Hurlburt Field) by focusing on three areas for the remainder of the study; 1) provide and evaluate the economic and clinical impact of expanding the pharmacotherapy benefit at military installations, 2) further evaluate and tailor the

modularized tobacco intervention training program, and 3) develop a tailored tobacco social marketing program for 18 to 24 year old military members. A brief discussion of each area and its reason for emphasis is provided below.

- 1) **Pharmacotherapy:** This is one of the main issues we were funded to evaluate via this project for the Department of Defense. In addition to being an important issue, this benefit of the study has been considered by many to be the main reason installations volunteered to participate. We offered donated product in the form of nicotine patches (which is the only form of NRT on formulary) or paid for tobacco cessation pharmacotherapy for our intervention sites. This enabled the site to provide an expanded benefit to its patients by allowing for smokers to access NRT without having to attend the smoking cessation class on the installation (which interferes with the duty day and is more difficult with deployments) or having to restrict its prescription to one time within a calendar year per person. By choosing this as one area of intense focus, we could provide more of the project resources to this important issue.
- 2) Tobacco Basic Skills Training: This aspect of the project was very well received by military members. This training component has 3 modules. The first is a series of over 500 PowerPoint slides that can be inserted into already existing briefings or combined into a stand-alone briefing. Topics of the slides include all aspects of tobacco use from finances, to medical issues, to prevalence rates, to cessation techniques. These professionally designed presentations are provided to anyone who wants to use them. The second module is a two hour training that teaches anyone to intervene with a tobacco user in a respectful manner and refer them to specialized services. This training is designed for anyone who wants or needs to be able to talk to a tobacco user about their habit. For example, in addition to medical staff, chaplains, SP's and unit supervisors have completed this training. The third module is a two hour training designed for those individuals who will be working with the tobacco user directly during their quit attempt. This training focuses on providing the intervener with the skills necessary to motivate a tobacco user to quit and to assist them in their efforts. The combination of these training modules provides the necessary knowledge and skills to all individuals interested in tobacco prevention and cessation and increases the awareness of tobacco as an important health issue on military installations. By focusing more of the project resources on this area, we were able to produce a package of training materials that have undergone several iterations and evaluations that are tailored specifically to the military. These materials will be an especially valuable potential resource for widespread dissemination throughout the military.
- 3) **Social Marketing:** Social marketing, which is the planning and implementation of programs designed to bring about social change using concepts from commercial marketing, is a new and exciting one in the realm of health. Its use with tobacco has been documented in other settings, most notably the "Truth" campaign in Florida that used social marketing to reduce the tobacco initiation rates among adolescents. This aspect of the project was targeted toward the junior enlisted personnel who have the highest rates of tobacco use in the military. In addition to focusing on a segment of the population at highest risk, it also was one of the most well received aspects of the project. This area of the project focused on developing messages and themes surrounding tobacco that resonate with our young troops.

We worked with a communications company to develop targeted messages about tobacco use prevention and cessation through the use of focus groups. In addition, we developed these themes into a military specific media campaign across the installation. By focusing on this aspect of the project we were able to capitalize on new techniques in the field of health promotion that have promising preliminary results.

7. Reconnaissance visits to each of the remaining Army posts to brief leadership and assess tobacco control infrastructure. These trips included introduction to the community plan, motivating bases about the project, identifying the main point of contact, briefing the command, and touring the base. The presentation of the community plan was tailored to be service-specific. No intervention components or assessment instruments were implemented during the visit – it was informational and motivational only. We have learned that given the very long delays which occur from base recruitment until IRB approval, significant loss of installation motivation for the study occurs without the reconnaissance trips.

8. Publications and presentations to date at national and international scientific conferences.

- 1. Poston, W.S.C., Taylor, J.E., Hoffman, K.M., Peterson, A.L., Lando, H.A., Shelton, S., & Haddock, C.K. (under review). Smoking and deployment: Perspectives of junior enlisted USAF and US Army personnel and their supervisors.
- 2. Haddock, C.K., Taylor, J.E., Hoffman, K.M., Poston, W.S.C., Peterson, A.L., Lando, H.A., & Shelton, S. (under review). Factors which influence tobacco use among junior enlisted in the United States Army and Air Force: A formative research study.
- 3. Taylor, J.E., Haddock, C.K., Poston, W.S.C., Hoffman, K.M., & Lando (under review). Attitudes towards tobacco cessation programs in the US military.
- 4. Taylor, J.E., Poston, W.S.C., Haddock, C.K., & Lando (under review). Does Administrative Mission Creep Impact Scientific Results? An examination of the impact IRB requirements has on a large survey.
- 5. Hoffman, K.M., Haddock, C.K., Poston, W.S.C., Taylor, J.E., Shelton, S., & Lando, H.A. (in press). A formative examination of messages which discourage tobacco use among junior enlisted members of the United States military. *Nicotine and Tobacco Research*.
- 6. Haddock, C. K., & Taylor, J. (January 2006). *Health promotion among women in the U.S. Military*. Showcase for Women's Health Research, University of Missouri Kansas City, Kansas City, MO.
- 7. Haddock, C.K. & Poston, W.S.C. (February, 2002). *Getting fit in a busy Air Force: Methods for overcoming barriers to regular exercise and implementing progressive activity plans that will improve your health and assist you in meeting the Air Force fitness standards.* Presented at the Spirit of Fitness Workshops I and II, 509th Bomber Wing, Whiteman AFB, MO.
- 8. Haddock, C.K., Poston, W.S.C., Taylor, J.E., Hoffman, K. & Lando, H. (2006). *Tobacco beliefs and attitudes among 18 to 24 year olds in the U.S. Air Force and Army*. Department of Defense Alcohol and Tobacco Advisory Committee, Washington, DC [invited presentation].
- 9. Hoffman, K., Taylor J., Haddock, C.K., Poston, W.C. (2006). *A qualitative study of tobacco-control themes for 18-24 year-olds in the Air Force*. Society for Research on Nicotine and Tobacco 12th Annual Meeting, Orlando, Florida.
- 10. Hoffman, K., & Haddock, C.K. (2005). *Where the rubber hits the road: The military tobacco user, policy, enforcement, and norms.* 133rd Annual Meeting of the American Public Health Association, Philadelphia, PA.

- 11. Haddock, C.K., Pyle, S.A., Poston, W.S.C. & Taylor, J.E. (2005). *Smoking, body weight and military fitness*. Society for Research on Nicotine and Tobacco 11th Annual Meeting, Prague, Czech Republic.
- 12. Poston, W.S.C., Pyle, S.A., Haddock, C.K. & Hoffman, K. (2005). *Smoking and stress among military personnel*. Society for Research on Nicotine and Tobacco 11th Annual Meeting, Prague, Czech Republic.
- 13. Lando, H.A., Haddock, C.K., Taylor, J.E., Poston, W.S.C., Muramoto, M., Connelly, T.A., & Schmidt, L. (April, 2004). *DoD STAR: A military community-based tobacco intervention*. Presentation at the PRMRP Military Health Research Forum, San Juan, Puerto Rico
- 14. Haddock, C.K. (2004). *Creating a Tobacco-Free Culture at Your Installation*. 43rd Navy Occupational Health and Preventive Medicine Workshop. Chesapeake, Virginia
- 15. Parker, L.C., Taylor, J.E., Pyle, S.A., Haddock, C.K. & Poston, W.S.C. (2004). *A scientific analysis of tobacco messages in military newspapers*. 112thth Annual Meeting of the American Psychological Association Annual Conference, Honolulu, Hawaii
- 16. Lando, H., Taylor, J.E., Haddock, C. K., Poston, W.S., Talcott, G.W., & Schmidt, L. (2003). Comprehensive approach to reducing tobacco use among young adults in the military. The 131st Annual Meeting of the American Public Health Association, San Francisco, CA
- 17. Taylor, J.E., Poston, W.S.C., Haddock, C.K., Peterson, A., & Lando, H. (October, 2006). Does administrative mission creep impact scientific results? 2006 Symposium at the Society for Research Administrators (SRA) International Annual Meeting, Quebec City, Quebec, Canada.
- 18. Haddock, C.K., Parker, L.C., Taylor, J.E., Poston, W.S.C., Lando, H., & Talcott, G.W. An analysis of messages about tobacco in military installation newspapers. *American Journal of Public Health*, *95*, 1458-1463.
- 19. Taylor, J.E., Poston, W.S.C., Pyle, S.A., Haddock, C.K., Lando, H., & Talcott, W.G. How well do health care providers document tobacco use? A Review of Medical and Dental Charts from the Air Force. *Proceeding of the 12th World Conference on Tobacco or Health*.
- 20. Lando, H.A., Taylor, J.E., Haddock, C.K., Poston, W.S.C., Talcott, W.G., & Schmidt, L. (November 2003). A Comprehensive Approach to Reducing Tobacco Use among Young Adults in the Military. Presented at the *American Public Health Association 131*st *Annual Meeting and Exposition, San Francisco, CA*.
- 21. Taylor, J.E., Poston, W.S.C., Pyle, S.A., Haddock, C.K., Lando, H., & Talcott, W.G. How well do health care providers document tobacco use? A Review of Medical and Dental Charts from the Air Force. Presented at the 12th World Conference on Tobacco or Health, Helsinki, Finland.
- 22. Lando, H., Haddock, C.K., Talcott, G.W., Schmidt, L.A., Muramoto, M.L., Xaverius, P.K, Poston, W.S.C., & Taylor, J.E. (November 2002). Department of Defense Comprehensive Tobacco Intervention Program: Project STAR. *Proceedings from the 2002 National Conference on Tobacco or Health, San Francisco, CA*, p. 128.
- 23. Lando, H., Xaverius, P., Haddock, C., Poston, C., Talcott, G., Schmidt, L. A comprehensive approach to reducing tobacco use among young adults in the military. Presidents' Symposium: Tobacco use by young adults: Challenges and opportunities for intervention. Society for Research on Nicotine and Tobacco, New Orleans, LA, February 2003.

- **8.** Comprehensive media analysis of tobacco control messages (also includes Navy and Marine bases). Using a structured and reliable coding system, we conducted a content analysis of health information in 12 military installation newspapers.
- **9. Held several conferences and team meetings**. In addition to the above milestones, several investigator meetings took place during the final year of funding to bring together key researchers, to discuss critical components of the project, and to consider additional manuscripts/presentations, and ideas for dissemination.
- **10. Team Communication.** In the ongoing effort to monitor the progress of the grant, military and research representatives participated in regular teleconferences.

REPORTABLE OUTCOMES:

- 1. Poston, W.S.C., Taylor, J.E., Hoffman, K.M., Peterson, A.L., Lando, H.A., Shelton, S., & Haddock, C.K. (under review). Smoking and deployment: Perspectives of junior enlisted USAF and US Army personnel and their supervisors.
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CONCLUSIONS:

Taking into considerations the modifications and transformations that this study underwent due to circumstances beyond our control, the following outlines the major contributions and conclusions which can be drawn from this study in three key areas:

- 1. Pharmacotherapy: This benefit provided to the installations via the study was considered by many to be the main reason installations volunteered to participate and was received by the leadership in an overwhelmingly positive fashion. We offered donated product in the form of nicotine patches (which is the only form of NRT on formulary) or paid for tobacco cessation pharmacotherapy for our intervention sites. This allowed for the site to provide an expanded benefit to its patients by allowing for smokers to overcome some of the barriers they identified as being restrictive. Those barriers included: access to NRT without having to attend the smoking cessation class on the installation which interferes with the duty day and is more difficult with deployments and having to restrict its prescription to one time within a calendar year per person. By choosing this as one area of intense focus, we were able to provide more of the project resources to this important issue. All of the NRT that we were able to provide the intervention sites was utilized and there was demand for more that we could not provide.
- 2. Tobacco Basic Skills Training: This aspect of the project was also well-received by military members. In addition, it has been shown to be extremely effective in other populations. This training component has 3 modules. The first was a series of over 500 PowerPoint slides that can be inserted into already existing briefings or combined into a stand-alone briefing. Topics of the slides included all aspects of tobacco use from finances, to medical issues, to prevalence rates, to cessation techniques. These professionally designed presentations were provided to anyone who wanted to use them.

The second module was a two hour training that teaches anyone to intervene with a tobacco user in a respectful manner and refer them to specialized services. This training was designed for anyone who wanted or needed to be able to talk to a tobacco user about their habit. For example, in addition to medical staff, chaplains, SP's, unit supervisors, and child care workers completed this training.

The third module was a two hour training designed for those individuals who were working with the tobacco user directly during their quit attempt. This training focused on providing the intervener with the skills necessary to motivate a tobacco user to quit and to assist them in their efforts. All available health and wellness center and medical personnel who were involved with military members who were quitting completed this training at the intervention sites.

The combination of these training modules provided the necessary knowledge and skills to all individuals interested in tobacco prevention and cessation and increased the

awareness of tobacco as an important health issue on military installations. By focusing project resources on this area, we produced a package of training materials that have undergone several iterations and evaluations that are tailored specifically to the military and can be used anywhere in the world. We believe that these materials have great potential for dissemination throughout the military.

3. Social Marketing: This aspect of the project was targeted toward the junior enlisted personnel since they have the highest rates of tobacco use in the military. In addition to focusing on a segment of the population at highest risk, it was one of the most visible aspects of the project because it also involved non-smokers. This area of the project focused on developing messages and themes surrounding tobacco that resonated with our young troops.

Four message/themes were identified which hold promise for future tobacco control efforts in the military: (1) smoking harms one's ability to positively influence others; (2) smoking increases the chance a military member will prematurely be discharged; (3) smoking lowers readiness to fight and win wars; and (4) smokers are not as productive as other military personnel. In contrast, messages focusing on manipulation by the tobacco industry and the health effects of tobacco use were not strongly supported by military personnel.

In addition, troops indicated that the primary method the military uses to discourage use is tobacco bans. Unfortunately, they also believed that the military accommodates tobacco use so that smoking remains convenient despite the bans on tobacco use. Smoking was believed to be encouraged through liberal smoking breaks, social interaction within designated smoking areas, and cheap and convenient tobacco products sold on military installations. Further, smoking was seen as an effective method to combat the stress and boredom of military life and to avoid weight gain.

Of particular importance in today's political climate, information was also found related to smoking and deployment. Important reasons for smoking included: 1) managing stress, boredom, anxiety, and sleep deprivation; 2) lack of alternate activities and privileges; 3) the perception that dangers in the field trump the health impact of smoking; and 4) the role of the military environment in encouraging smoking. In addition, the phenomenon of new initiation and relapse to smoking in the field were discussed.

We worked extensively with a communications company to develop these targeted messages about tobacco use prevention and cessation which are military specific and were used in media campaigns across the installation. We believe that these messages have the potential to be used effectively with military personnel on a worldwide basis, although further adaptation may be needed to optimize the messages for deployed troops.

APPENDICES:

None

BINDING:

Because all reports are entered into the Department of Defense Technical Reports database collection and are microfiched, it is recommended that all reports be bound by stapling the pages together in the upper left hand corner. All original reports shall be legible and contain original photos/illustrations. Figures shall include figure legends and be clearly marked with figure numbers.